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MSc Computer Science: Welcome

Summer Semester, 01.04.2025 Prof. Dr. Jan Reineke



UNIVERSITÄT DES SAARLANDES

SIC Saarland Informatics Campus



Welcome at SIC

Saarland Informatics Campus

Welcome to your place of study in the heart of Europe.







Graduate School

CS Department

MPI INF

110

Excellence Cluster MMCI

Language Technology



Math Department

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About us - Research

- 4 informatics institutes and 3 collaborating departments on campus
- 2k+ students from 80+ countries
- ~ 74 research groups, 500+ doctoral candidates
- ~ 800 scientists at Saarland Informatics Campus
- 24 informatics study programs, **16 research fields**
- 6 Konrad Zuse Medals **39 ERC** Grants 7 Leibniz Awards





More about us:

https://saarland-informatics-campus.de/en/ueberuns-aboutus/



Your Studies at Saarland University



Study Regulations

Read your study documents carefully!



Subject-Specific Regulations for Bachelor's and Master's Degree Programmes in Computer Science at Saarland University Supplementing the Joint Examination Regulations for the Bachelor's and Master's Degree Programmes of Faculty 6 (Natural Science and Technology Faculty I – Mathematics and Computer Science)

2 July 2015

Note: This translation is provided for information purposes only. In the event of any discrepancy between the translation and the original German version published in the Official Bulletin (*Dienstblatt der Hochschulen des Saarlandes*), the provisions of the latter shall take precedence.

Pursuant to Section 59 of the Saarland University Act of 23 June 2004 (Official Gazette of Saarland, p. 1782) as amended by the Act of 14 October 2014 (Official Gazette, p. 406) and pursuant to the Joint Examination Regulations for the Bachelor's and Master's Degree Programmes of Faculty 6 (Natural Science and Technology Faculty I – Mathematics and Computer Science) of 2 July 2015 (Official Bulletin No. 72, p. 616) and with the consent of the Saarland University Senate and the University Board, Faculty 6 (Natural Science and Technology Faculty I – Mathematics and Computer Science) at Saarland University hereby issues the following Subject-Specific Regulations Governing the Bachelor's and Master's Degree Programmes at the Department of Computer Science.

§ 27 Scope

(cf. Sec. 1 of the Joint Examination Regulations)

These subject-specific regulations apply to the Bachelor's and Master's degree programmes in computer science at Saarland University.

§ 28 Types of degree programmes (cf. Sec. 3 of the Joint Examination Regulations)

The Bachelor's and Master's degree programmes in computer science are single-subject degree programmes within the meaning of the Framework Examination Regulations for Bachelor's and Master's Degree Programmes at Saarland University (BMPRO).

§ 29 Student workload (cf. Sec. 4 of the Joint Examination Regulations)

Attendance may be compulsory for certain introductory seminars, seminars and practical

assignments. Students will be notified of this by the course or module coordinator at the beginning of the course or module.

ہ عن Examiners; thesis examiners; supervisors, observers (cf. Sec. 8 of the Joint Examination Regulations)

(1) The Examination Board shall appoint from the relevant department examiners, thesis examiners and/or thesis supervisors drawn from the groups in Section 8(1), items 1 to 7 of the Joint Examination Regulations for the Bachelor's and Master's Degree Programmes of the Faculty of Mathematics and Computer Science and, additionally, from



Study Regulations for Master's Program Computer Science

- **27 graded** credits in the category of **core lectures** in computer science
- 27-31 graded credits in the categories of core lectures, advanced lectures, or seminars in computer science (here: at most 1 seminar!)
- 7 graded credits in the category of seminars in computer science
- At least **17 ungraded credits** must be acquired by:
 - Further courses in computer science
 - Master practical training in research groups at CS department
 - Internship in a company (max. 6 CP); approved by the examination board
 - Leading a tutorial (tutor, 4 CP)
 - Language courses (max. 6 CP, living language)
 - Courses from other departments, which have been applied for and approved by the examination board (e.g. in mathematics, business informatics or computer linguistics)
- 12 graded credits for the Master's seminar and 30 CP for the Master's thesis



Example master's program Computer Science

#1	Core Lecture 9 CP	Core Lecture 9 CP	Advanced Course 6 CP	Language Course 6 CP	30 C			
#2	Core Lecture 9 CP	Core Lecture 9 CP	Seminar 7 CP	Advanced Course 6 CP	31C			
#3	Master Seminar 12 CP	Advanced Course 6 CP	Advanced Course 6 CP	Advanced Course 6 CP	30 C			
#4	Thesis 30 CP							



Example master's program Computer Science



Credit Points Calculation • 1 CP = 30 hours of work• 30 CP = 900 hours of work• $900/40^* = 22.5$ weeks of *full-time* work * Assuming 40 hours of work per week



Example mester's program Computer Science



	Advanced Course 6 CP	Language Course 6 CP	30 C
	Seminar 7 CP	Advanced Course 6 CP	31 C
	Advanced Course 6 CP	Advanced Course 6 CP	30 C
e	esis CP	30 C	



Example Course List: Core courses (offered at least every two years)

Algorithms and Data Structures Artificial Intelligence Operating **Automated Reasoning** Compiler Construction Complexit Computer Algebra Machine **Computer Graphics** Embedded S Data Base Systems Se Software Engineering Dig Image Processing an Compute Human Computer Interaction



Data Net	tworks
Systems	Semantics
	Distributed Systems
ty Theory	Optimization
Learning	Computational Logic
Systems	Cryptography
ecurity	
gital Transn	nission, Signal Processing
er Vision	

Verification

This term: Core <u>courses</u>

→ (i	🖸 🖬 🖸 Core l	ectures		
	LectNo.	Lecture	<u>Type</u>	Act
	156438	<u>Cryptography</u> - Hanzlik, Döttling	Lecture / Exercise/problem-solving class	
	156439	Introduction to Computational Logic - Smolka	Lecture / Exercise/problem-solving class	
	156440	<u>Data Networks</u> - Feldmann	Lecture / Exercise/problem-solving class	
	156441	Machine Learning - Ochs , Mitarbeiter/-innen des Lehrstuhls	Lecture / Exercise/problem-solving class	
	156443	Image Processing and Computer Vision - Weickert , Mitarbeiter des Lehrstuhls	Online-Vorlesung	
	156472	Discrete Optimization (before Optimization) - Karrenbauer	Lecture / Exercise/problem-solving class	
	156473	Distributed Systems - Druschel, Garg	Lecture / Exercise/problem-solving class	
	156772	<u>Cyber-Physical Systems (former Embedded Systems)</u> - Maggio	Lecture / Exercise/problem-solving class	
	157331	<u>Verification</u> - Kaminski	Lecture / Exercise/problem-solving class	
	157953	Convex Analysis and Optimization - Ochs , Mitarbeiter des Lehrstuhls	Lecture / Exercise/problem-solving class	





Example master's program Computer Science

#1	Core Lecture 9 CP	Core Lect 9 CP
#2	Core Lecture 9 CP	Core Lecture
#3	Master Seminar 12 CP	Advanced Cours 6 CP
#4		3



This term: Advanced <u>courses + Seminars</u>

→ 🛈 👼 Advanced Lectures

LectNo.	Lecture	Туре	
155263	Machine Translation - van Genabith	Lecture / Ev	
155272	Statistical Natural Language Processing - Klakow	Lecture	
155778	Digital Signal Processing / Digitale Signalverarbeitung - Klakow	Lecture	Le
156444	High Level Computer Vision - Schiele	Advance	N
156445	Internet Transport (former: Multimedia Transport) - Herfet	Lecture	15
156446	Realistic Image Synthesis - Slusallek	Advance	15
156456	Trustworthy Machine Learning - Fritz , Dziedzic	Advance	15
156458	Topics in Algorithmic Data Analysis - Vreeken	Advance	15
156470	Interactive Systems - Steimle	Lecture	15
156633	Causality for Complexity Theorists - Bläser	Advance	15
156637	Building an 8-bit Computer from Scratch - Hack	Advance	15
156744	Distibuted Graph Algorithms - Brandt	Advance	15
157140	Foundations of Web Security - Stock	Advance	15
157141	Attacks Against Machine Learning Models - Zhang	Advance	15
157142	Cyber-Physical Systems Security (formally Physical-Layer Security) - Tippenhauer	Advance	15
157168	Foundations of Firmware Security - Abbasi	Advance	15
157220	Trusted Al Planning - Hoffmann	Advance	15
157221	Privacy-Enhancing Technologies - Lueks	Advance	15
157222	<u>Algorithms for Cryptanalysis</u> - Joux	Advance	15
157224	Empirical Software Engineering Research - Apel	Advance	15
157236	Spezialvorlesung der Bioinformatik: Algorithms for Sequence Analysis - Rahmann	Special I	15
157295	Image Compression - Peter	Lecture	15
157352	Numerical Algorithms for Visaul Computing - Weickert , Chizhov	Lecture	15
157356	Intelligent Systems and Human Learning - Nagashima	Advance	15
157399	<u>Coinductive Proofs</u> - Finkbeiner	Advance	15
157411	<u>Quantitative Model</u> - Hermanns	Advance	15
157621	Data Science - Maaß	Lecture	
157633	Recht der Cybersicherheit - Datenschutzrechtliche Aspekte - Mitarbeiter des Lehrstuhls, Sorge	Advance	15
157635	IT-Forensics - Mitarbeiter des Lehrstuhls, Sorge	Advance	15
158096	Image Compression - Peter, Mitarbeiter des Lehrstuhls	Lecture	15
158150	Lectures on Modern Optimization Methods - Stich	Block led	15
			1 0



Activity a/problem colving class Seminars ect.-Lecture 55262 Machine Learning for Natural Language Processing - Klakow 55265 Multimodal Dialogue Systems - Petukhova 55267 <u>Neural Networks in Brains and Computers</u> - Hahn Defining and Measuring Abstract Concepts in NLP - Gautam 55290 Equality Saturation - Hack 57150 Data-driven Understanding of the Disinformation Epidemic (DUDE) - Zhang 57175 Coping with computational hardness: approximation, moderately exponential-time, and parameterized algorithms - Marx 57176 Politics of Security and Privacy - Krombholz 57293 <u>Research Methods in Human-centric Security</u> - Krombholz 57294 Verification of Distributed Systems - Jacobs 57439 Generative AI for Data Insights on SAP BTP (vormals "Data analysis on the SAP Business Technology Platform (SAP BTP)") - Loos, Berrang 57546 Viswanthan Imprecise Probabilistic Machine Learning - Muandet 57627 57631 Advanced Topics in Program Analysis - Dimitrova Provable Security of Key Exchange Protocols - Cremers, Mitarbeiter/-innen des Lehrstuhls 57650 <u>Cybersecurity in Organizational Practice</u> - Stock, Golla, Mitarbeiter/-innen des Lehrstuhls 57651 The Web Security Seminar - Pellegrino , Fass , Staicu 57652 57653 Wireless Security - Singh Privacy in Computations and Communications - Hanzlik, Sasy 57654 57989 Sweat and Survive - The VR Edition - Krüger , Kosmalla <u>Reliability in Modern Cloud Systems</u> - Mitarbeiter/-innen des Lehrstuhls , Kaufmann, PhD 57990 Spatiotemporal Models and Inference - Wolf 58114 58115 <u>Al in the Global South</u> - Weber, Cannanure 58116 Generative AI for Interactive Systems - Steimle, Schmitz, Ram <u>Al Coding Assistants: Hype or Game Changer?</u> - Apel 58117 GameCraft: Spielmechaniken und Spiele-Prototyping - Krüger, Lessel 58119 58120 <u>Privacy Engineering und Recht</u> - Sorge Mechanism Design Without Money - Mehlhorn 158121 158148 <u>Research Project in "Technology and Self-Care"</u> - Feit , Pissani

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Туре
seminar
Block
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seminar

Course catalogue (LSF)





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Course list (Core lectures)

How to choose a lecture – example: ICL

current semester

Course Overview

Vorlesungsverz	eichnis		
Image: Mathematic	s and Com	iputer Science	
→ ① Compu	ter Science	9	
	urses on C	omputer Science	
→ ()	Core Lect	tures	
	Lect No.	Lecture	Туре
	122116	Artificial Intelligence - Hoffmann, Koehler	Lecture / Exercise/problem-s
mole	123525	Cryptography - Döttling	Lecture / Exercise/problem-s class
Exam	123526	Introduction to Computational Logic - Spiolka	Lecture / Exercise/problem-s
	123531	Optimization - Karrenbauer	Lecture / Exercise/problem-s
	123532	Embedded Systems	Lecture / Exercise/problem-s
	123537	Data Networks - Feldmann	Lecture / Exercise/problem-s
	123678	Image Processing and Computer Vision - Weickert, Mitarbeiter des Lehrstuhls	Lecture / Exercise/problem-s

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Introduction to Computational Logic - Einzelansicht Zurück

Funktionen: markierte Termine vormerken

Grunddaten Termine Zugeordnete Person Studiengänge Hochschulstruktur Inhalt Strukturbaum Seiteninhalt:

Grunddaten

Veranstaltungsart	Vorlesung / Übung	Langtext	
Veranstaltungsnummer	136477	Kurztext	
Semester	SoSe 2022	sws	
Erwartete Teilnehmer/-innen	10!	Max. Teilnehmer/-innen	
Turnus	example	Veranstaltungsanmeldung	Keine Verans
Credits	Er	Please follow the in	struction
Weitere Links	https://cms.sic.saarland/icl_22/	the webnage and/o	r
Sprache	englisch	join the first lecture	,

Termine Gruppe: 👼

	Tag	Zeit	Turnus	Dauer	Raum	Raum- plan	Lehrperson	Status	Be
> 5	Mi.	12:00 bis 14:00	woch		Gebäude E1 3 - Hörsaal II (0.02.1)				
⊳ ≣	Fr.	14:00 bis 16:00	woch		Gebäude E1 3 - Hörsaal II (0.02.1)				







#1	Core Lecture 9 CP	Core Lecture 9 CP
#2	Core Lecture 9 CP	Core Lecture 9 CP
#3	Advanced Lecture 6 CP	Ad. \Lecture
#4		T 3



Master seminar & Master thesis



Master Seminar (12 ECTS)

Objective: Prepares students for their Master's Thesis by introducing them to independent research and topic presentation

Typical requirements:

- Presentation: Students must give an oral presentation clearly outlining their intended thesis topic
- Written Proposal: A written description specifying the problem, objectives, and methodology must accompany the presentation

Timeline: The Master's thesis topic must be registered within one semester after successfully completing the Master Seminar; failure to meet this deadline will require attendance in a new seminar









Master seminar & Master thesis



Master Thesis (30 ECTS)

Objective: Demonstrates the student's ability to independently solve complex problems in *Computer Science* through original scientific work

Duration: The thesis must be completed within six months after official registration

Colloquium: A mandatory 30-minute colloquium (oral defense) must be completed within six weeks after thesis submission, validating the thesis as the student's own original work

Assessment and Grading: The thesis and colloquium are graded, significantly contributing to the overall Master's degree grade

Assessment and examination: academic integrity & original work

Written exams, oral exams, seminar presentations, and project work

- Possibility to retake core lecture exams <u>once</u>, <u>in the same semester</u> to improve your grade
- **Originality:** All submitted work, particularly projects, theses, and seminar assignments, must reflect your own thoughts, analyses, and conclusions
- **Proper Citation:** Always acknowledge sources of ideas, data, code, images, or direct quotations clearly in accordance with academic standards
- Zero Tolerance for Plagiarism: Plagiarism can lead to severe academic penalties, including failing grades, suspension, or expulsion

Finding a thesis

- Choose your courses strategically
- Approach potential supervisors
- Special case: External thesis





Go back to the general FAQ

Table of Contents

- Useful Links
- Finding a Supervisor
- Contacting Potential Supervisors
- Writing Your Thesis
- Grading
- Other

https://cs.fs.uni-saarland.de/en/faq-thesis/



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